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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/728,654	12/05/2003	Michael E. Seitz	MTC 6634.1(40-21(3584)US)	8454
321 7590 SENNIGER POWERS LLP 100 NORTH BROADWAY 17TH FLOOR ST LOUIS, MO 63102	04/16/2010		EXAMINER FRAZIER, BARBARA S	
			ART UNIT 1611	PAPER NUMBER
			NOTIFICATION DATE 04/16/2010	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

uspatents@senniger.com

Office Action Summary

Application No.

10/728,654

Applicant(s)

SEITZ ET AL.

Examiner

BARBARA FRAZIER

Art Unit

1611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 February 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-69 is/are pending in the application.
- 4a) Of the above claim(s) 6-8, 13-16, 37-39 and 44-47 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 9-12, 17-36, 40-43 and 48-69 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2/22/10 has been entered.

Status of Claims

1. Claims 1-69 are pending in this application.
2. Claims 6-8, 13-16, 37-39, and 44-47 remain withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 1/10/08.
3. Claims 1-5, 9-12, 17-36, 40-43, and 48-69 are examined.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. **Claims 1-5, 9-12, 17-36, 40-43, and 48-69 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement.** The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 1, as amended in the response filed 4/27/09, claims that the microcapsule has a release rate which is characterized by a half-life ranging from about 5 days to about 100 days, the half-life being calculated from a measured release of pesticide over time from a population of microcapsules immersed in water at a temperature of about 30°C (lines 13-17 of claim 1). In their response, Applicants state that a half-life ranging from about 5 days to about 100 days is supported at paragraph [0014].

Paragraph [0014] reads as follows:

[0014] The invention is further directed to an agricultural formulation comprising a liquid dispersion of microcapsules. The microcapsules comprise polymer shells encapsulating a core material which comprises a pesticidal compound. The core material is encapsulated in a shell comprising a polymer produced by reaction of an isocyanate with other monomers in an encapsulation, shell-forming polymer system, and said other monomers comprise a principal amine reactant and an auxiliary amine reactant. The auxiliary amine is reactive with the isocyanate to affect the permeability of the shell with respect to said pesticide.

Paragraph [0014] does not mention half-life. Therefore, paragraph [0014] does not provide support for a half-life ranging from about 5 days to about 100 days. It is noted that, while paragraph [0043] of the specification does discuss half-lives of the microcapsules, the range of about 5 days to about 100 days is not taught:

[0043] Half-lives of microcapsules of this invention have been calculated according to this method, which is further detailed in Example 1D and FIG. 1A. Preferably, the half-life of microcapsules according to the present invention ranges between about 3 days and 500 days, or about 25 to about 400 days, or about 50 to about 300 days, or about 100 to about 200 days. The release rate in less controlled environments (e.g., in an agricultural field), is not measured by this method, rather, the release of a core material such as a pesticide in the field may be indicated by alternative means (e.g., bioefficacy).

Since the specification of the instant application as originally filed does not teach that the half-life of the microcapsules may be limited to a range of about 5 days to about 100 days, this limitation constitutes new matter.

6. **Claims 1-5, 9-12, 17-36, 40-43, and 48-69 are rejected under 35 U.S.C. 112, first paragraph**, because the specification, while being enabling for a pesticidal material according to claim 1 wherein the principal amine is triethylene tetraamine (TETA) and the auxiliary amine is meta-xylene diamine (MXDA) in a ratio of 20:80 to 40:60 and having a half-life ranging from about 5 days to about 100 days, does not reasonably provide enablement for a pesticidal material according to claim 1 having any principal amine and any auxiliary amine in any amount, and having a half-life ranging from about 5 days to about 100 days, as currently claimed. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims.

To be enabling, the specification of the patent must teach those skilled in the art how to make and use the full scope of the claimed invention without undue

experimentation. In re Wright, 999 F.2d 1557, 1561 (Fed. Cir. 1993). Explaining what is meant by “undue experimentation,” the Federal Circuit has stated:

The test is not merely quantitative, since a considerable amount of experimentation is permissible, if it is merely routine, or if the specification in question provides a reasonable amount of guidance with respect to the direction in which the experimentation should proceed to enable the determination of how to practice a desired embodiment of the claimed invention. PPG v. Guardian, 75 F.3d 1558, 1564 (Fed. Cir. 1996).

The factors that may be considered in determining whether a disclosure would require undue experimentation are set forth by In re Wands, 8 USPQ2d 1400 (CAFC 1988) at 1404 where the court set forth the eight factors to consider when assessing if a disclosure would have required undue experimentation. Citing Ex parte Forman, 230 USPQ 546 (BdApls 1986) at 547 the court recited eight factors:

- 1) the quantity of experimentation necessary,
- 2) the amount of direction or guidance provided,
- 3) the presence or absence of working examples,
- 4) the nature of the invention,
- 5) the state of the prior art,
- 6) the relative skill of those in the art,
- 7) the predictability of the art, and
- 8) the breadth of the claims.

These factors are always applied against the background understanding that scope of enablement varies inversely with the degree of unpredictability involved. In re Fisher, 57 CCPA 1099, 1108, 427 F.2d 833, 839, 166 USPQ 18, 24 (1970). Keeping that in mind, the Wands factors have been considered and are relevant to the instant fact situation for the following reasons:

1. The nature of the invention, state and predictability of the art, and relative skill level

The invention relates to pesticidal material comprising a substantially water-immiscible core material and a microcapsule shell wall formed by interfacial polymerization of a polyisocyanate, a principal amine, and an auxiliary amine, wherein the microcapsule has a release rate which is characterized by a half-life ranging from about 5 days to about 100 days. The relative skill of those in the art is high, that of a PhD. That factor is outweighed, however, by the unpredictable nature of the art of pesticidal microcapsules. As illustrative of the state of the art of pesticidal microcapsules, the examiner cites Seitz et al (US Patent 5,925,525) which shows half-lives ranging from a few hours to years, as evidenced by the Declaration by Becher filed 1/27/10 (e.g., see paragraphs 13-16). With respect to microcapsules formed by reaction of a polyisocyanate with two amines, the Declaration by Becher additionally demonstrates that not all combinations of principal amine and auxiliary amine result in a microcapsule having a half-life ranging from about 5 days to about 100 days. The Declaration cites pages 29 and 30 of Applicant's response to the August 27, 2009 Final Office Action, and states that the half lives fall in a useful range over wide ranges of relative proportions (paragraph 13 of the Declaration). However, only three of the ten microcapsules formed actually have half lives falling within the range of 5 days to 100 days, i.e., Example 3F, wherein the ratio of TETA to MXDA is 20:80 (199.92 hours), Example 3E, wherein the ratio of TETA to MXDA is 30:70 (626.4 hours), and Example 3G, wherein the ratio of TETA to MXDA is 40:60 (179.08 hours). The remaining Examples all show half lives of less than 5 days, outside of the claimed range. Therefore, not all ratios of principal amine to auxiliary amine (in this case, TETA to

MXDA) result in half lives within the claimed range. Furthermore, since there is unpredictability with regards to half lives of pesticidal microcapsules, it is not clear which other principal amines and auxiliary amines, and in what ratios, would result in half lives within the claimed range.

2. The breadth of the claims

The claims are very broad insofar as they recite any "principal amine" and any "auxiliary amine", in any ratio, but do not give any specifics regarding what principal amine and auxiliary amine may be used, and in what ratios, in order to achieve a half-life ranging from about 5 days to about 100 days.

3. The amount of direction or guidance provided and the presence or absence of working examples

The specification provides no direction or guidance for what principal amine and auxiliary amine may be used, and in what ratios, in order to achieve a half-life ranging from about 5 days to about 100 days. While the data presented in the specification discusses trends regarding half-life, e.g., that half-lives decrease as the amount of Jeffamine T-403 involved in the polymerization is increased relative to Jeffamine EDR-148 (page 50 of the specification), no reasonably specific guidance is provided for selecting a principal amine and auxiliary amine, in a specified ratio, in order to achieve a half-life ranging from about 5 days to about 100 days. The latter is corroborated by the working examples.

4. The quantity of experimentation necessary

Because of the known unpredictability of the art, and in the absence of

experimental evidence commensurate with the claims, no one skilled in the art would accept the assertion that the instantly claimed pesticidal materials, comprising principal amine and auxiliary amine in an unspecified ratio, could predictably have a half-life ranging from about 5 days to about 100 days as inferred by the claim. Accordingly, the instant claims do not comply with the enablement requirement of §112, since to practice the invention claimed in the patent a person of ordinary skill in the art would have to engage in undue experimentation, with no assurance of success.

Claim Rejections - 35 USC § 103

7. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

8. The rejection of claims 1-5, 9-12, 17-36, 40-43, and 48-69 under 35 U.S.C. 103(a) as being unpatentable over Seitz et al in view of Asrar '901 is withdrawn in view of Applicant's Declarations filed 1/27/10 and 1/28/10 demonstrating that the disclosures relied upon in Asrar '901 represent the work of the group of inventors of the claimed invention. The rejection of claims 1-5, 9-12, 17-36, 40-43, and 48-69 under 35 U.S.C. 103(a) as being unpatentable over Seitz et al alone is maintained (see paragraph 9, below). The rejection of claims 1-5, 9-12, 17-36, 40-43, and 48-69 under 35 U.S.C. 103(a) as being unpatentable over Seitz et al in view of Becher et al (US Patent 4,563,212) is newly applied (see paragraph 9, below).

9. Claims 1-5, 9-12, 17-36, 40-43, and 48-69 are rejected under 35 U.S.C. 103(a) as being unpatentable over Seitz et al (US Patent 5,925,595), alone or further in view of Becher et al (US Patent 4,563,212).

The claimed invention is drawn to a pesticidal material comprising a substantially water-immiscible core material, the core material comprising a pesticide and being encapsulated in a shell having a predetermined permeability with respect to the core material, wherein the core material is a single phase liquid at 50°C, the predominant release mechanism of core material from the microcapsule is molecular diffusion of the core material through the shell wall, further wherein the shell of the microcapsule is formed by an interfacial polymerization of a polyisocyanate with other monomers in an encapsulation shell-forming polymerization system, said other monomers comprising a principal amine and an auxiliary amine, and further wherein the microcapsule has a release rate which is characterized by a half-life ranging from about 5 days to about 100 days, the half-life being calculated from a measured release of pesticide over time from a population of microcapsules immersed in water at a temperature of about 30°C (see claim 1), and an agricultural formulation comprising a dispersion of microcapsules (which comprise the pesticidal material) in an aqueous phase (see claim 32).

Seitz et al teach a microencapsulated composition comprising a capsule wall that comprises the polymerization product of a triisocyanate, an aliphatic diisocyanate, and a polyamine, and an internal phase that comprises a first core chemical and a second core chemical (see claim 36). The triisocyanate Desmodur N3200 (the trifunctional biuret adduct of hexamethylene diisocyanate), the polyamine triethylene tetramine, and

the core chemical alachlor (which is a single phase liquid at 50°C) are exemplified (see Examples 1-4). Seitz et al also teach that varying the ratios of isocyanates used in the formation of the shell wall will lead to optimizing properties of the shell wall, such as permeability (for example, see col. 4, line 64 - col. 5, line 7). Seitz et al also teach that different polyamines are suitable in the polymerized shell wall product (col. 8, lines 1-8). Seitz et al further teach that multifunctional isocyanates (i.e., di- and triisocyanates) are used in the polymerized shell wall product (for example, see columns 3 and 7). Release by molecular diffusion with half-lives of 74 days and 32 days are exemplified (Examples 16 and 17, column 16).

While Seitz et al suggest the use of several different polyamines in the microcapsule shell (col. 8, lines 1-5), Seitz et al do not specifically teach that an auxiliary amine is used with the polyisocyanates and principal amine to form the shell.

However, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to form the microencapsulated composition by the polymerization of polyisocyanate, a principal amine (such as triethylene tetramine), and an auxiliary amine (such as polyoxypropylene triamine) according to the claimed invention, with a reasonable expectation of success.

It is generally *prima facie* obvious to combine prior art elements according to known methods to yield predictable results. See MPEP 2141 III (A). Since Seitz et al teach that eight polyamines, including triethylene tetramine and polyoxypropylene triamine, would be expected to "function adequately" in the composition of Seitz et al., it would have been *prima facie* obvious to use more than one polyamine in the

polymerization with the polyisocyanates in order to form the microencapsulated composition, with a reasonable expectation of success.

Additionally, since Seitz et al teach that one of the polyurea shell wall components (i.e., the isocyanate) may be varied by using more than one isocyanate in specified ratios in order to improve the permeability of the shell wall, it would be obvious to one skilled in the art to also try varying the other component of the polyurea shell wall (i.e., the polyamine) by using more than one amine in specified ratios in order to improve the permeability of the shell wall. One skilled in the art would reasonably expect success from the use of more than one amine in forming the shell wall because multifunctional isocyanates are used in forming the shell wall, as taught by Seitz et al, and therefore would reasonably accommodate more than one amine.

Additionally or alternatively, one skilled in the art would find it obvious to use more than polyamine because the use of two polyamines in an interfacial polymerization with an isocyanate to form a polyurea shell wall to encapsulate a pesticide is already known.

Becher et al teach encapsulation by interfacial polycondensation to form a polyurea shell wall, wherein the first shell wall component is a diisocyanate, and the second shell wall component is a polyfunctional amine or a mixture of polyfunctional and difunctional amines (e.g., see claim 13). The active ingredient encapsulated may be an herbicide, such as alachlor (col. 4, line 41 and Examples).

Therefore, since the prior art of Becher et al teaches that either one amine or two amines may be reacted with an isocyanate by interfacial polymerization to encapsulate

an herbicide such as alachlor, one skilled in the art would find it obvious to use two amines taught by Seitz et al to form its microcapsules, with a reasonable expectation of success.

With respect to the agricultural formulation comprising a dispersion of microcapsules in an aqueous phase (claims 32-36, 40-43, and 48-69), Seitz et al. teach that an aqueous liquid is added to the combination of isocyanate and core chemical to form an oil-in-water emulsion before reacting the emulsion with a polyamine to form microcapsules which encapsulate the water-immiscible core chemical (see abstract). Therefore, the resultant microcapsules are dispersed in an aqueous liquid.

With respect to claims 2 and 33, the polyamines of Seitz et al. described above are not hydrolysis products of the polyisocyanate.

With respect to claims 3-5 and 34-36, the properties of predetermined and greater permeabilities would be present in the microcapsule and formulations of Seitz et al., given the fact that the microcapsule shell of Seitz et al. can be formed from the same components as those taught in the claimed invention.

With respect to claims 9, 22, 40, and 53, the properties relating to solubility would be present in the microcapsule and formulations of Seitz et al., given the fact that the microcapsule shell of Seitz et al. can be formed from the same components as those taught in the claimed invention.

With respect to claims 10-12, 17-18, 41-43, and 48-49, Seitz et al. teach that both triethylene tetramine and polyoxypropylene triamine are "expected to function adequately" in the microcapsule composition (col. 8, lines 1-5).

With respect to claims 19, 20, 50, and 51, Seitz et al. teach the use of Desmodur N3200 (the trifunctional biuret adduct of hexamethylene diisocyanate) as the triisocyanate (e.g., see Examples 1-4).

With respect to claims 21 and 52, the property of being "substantially non-porous" would be present in the shell of Seitz et al., given the fact that the microcapsule shell of Seitz et al. can be formed from the same components as those taught in the claimed invention.

With respect to claims 23-25 and 54-56, Seitz et al. teach that herbicides, such as the acetanilide alachlor, are particularly preferred core materials (col. 8, lines 20-22).

With respect to claims 26 and 57, Seitz et al. teach that "in one preferred embodiment, the core contains both a herbicide and a safener" (col. 8, lines 26-27).

With respect to claims 27-29 and 58-60, Seitz et al. teach that the core chemical can optionally have combined with it a hydrophobic diluent (col. 3, lines 53-54). Seitz et al. further teach that the chemical nature and the amount of core diluent used determines its effect on the release, stating that a poor solvent will decrease the release, and a good solvent will accelerate the release (col. 5, lines 29-37). Therefore, the addition of the diluent may affect the solubility parameters of the core material as disclosed in the claimed invention.

With respect to claims 30 and 61, Seitz et al. teach a wall to core ratio of 8% (e.g., see Examples 13 and 14); this is encompassed by Applicant's shell to core ratio of less than 33%.

With respect to claims 31, 62, 65, and 68, Seitz et al. teach a wall to core ratio of 8%, and an average size of 3 microns (Examples 13 and 14). Based on these measurements, the microcapsule would have a mass to volume ratio and a volumetric diameter distribution within the measurements of the claimed invention.

With respect to claim 63, the property of the viscosity of the dispersion of Seitz et al. would necessarily be encompassed by the viscosity ranges of the formulation of the claimed invention, given the fact that the size and weight of the shell and core of Seitz et al. are encompassed within the size and weight ranges of the claimed invention.

With respect to claim 64, Seitz et al. teach that the capsules have a particle size ranging from 2.2 to 4.5 microns (see Examples); this is encompassed by Applicant's range of 2 to 8 microns.

With respect to claim 66, Seitz et al. teach in Example 1 that the weight of the core and shell is 408.9 grams, and the total weight is 732.7 grams; therefore the weight percent of the capsule is 56% (see Example 1); this is encompassed by Applicant's range of less than 65 weight percent microcapsules.

With respect to claim 67, Seitz et al. teach that a preservative may be added to the formulation (col. 9, lines 29-30).

With respect to claim 69, Seitz et al. applying the formulation to agricultural fields of rox orange sorghum and barnyardgrass (e.g., see Example 15, column 13) and Dekalb corn hybrids (e.g., see Example 21, column 21).

Response to Arguments and Declaration

10. Applicant's arguments filed 1/27/10 have been fully considered but they are not persuasive.

Applicants first argue that Seitz et al do not disclose or suggest using more than one amine to prepare their microencapsulated pesticide nor do they disclose any exemplary formulations containing more than one polyamine, and that the idea of using two or more amines is the inventive concept that applicants have discovered and now claim. Applicants argue that Seitz did suggest other components that may be multiplied, but contained no language that suggests multiplication of polyamine species, and therefore the prior art does not include "each element claimed".

This argument is not persuasive. Contrary to Applicant's assertions, one skilled in the art would find it obvious to use more than one amine, since Seitz et al teach that other components may be varied in order to improve the permeability of the shell wall, and therefore one skilled in the art would also find it obvious to try using more than one amine in order to improve the permeability. That Seitz did not specifically state that more than one polyamine could be used does not constitute a teaching against it. Additionally, the use of more than one amine in an interfacial polymerization with an isocyanate to encapsulate a pesticide is already known, as taught by Becher et al, and therefore one skilled in the art would find it obvious to use more than one amine with the composition of Seitz et al.

Applicants also argue that, as shown by the data submitted in the Response to Final Office Action on October 26, 2009 and as established by the data compared in the

attached Declaration of David Z. Becher, the preparation of microcapsules using a blend of a principal amine and an auxiliary amine unexpectedly resulted in a degree of reliability and control of half life of release that could not have been predicted from Seitz et al's disclosures and examples. The remainder of Applicant's arguments is directed to the Declaration of Becher.

The Declaration of Becher has been fully considered, but is not persuasive for overcoming the rejection.

When determining whether or not the Declaration demonstrates superiority of a property shared with the prior art, it is first noted that the claimed invention limits the half-life of the pesticidal material to from about 5 days to about 100 days (see claim 1). As noted previously, Examples 16 and 17 of Seitz et al exemplify release by molecular diffusion with half-lives of 74 days and 32 days, i.e., within the claimed range. The data presented by Applicants in the Response to Final Office Action on October 26, 2009 (pages 29 and 30) and referenced in the Declaration of Becher, only shows three points within the claimed half-life range, i.e., the use of the polyamines TETA and MXDA in ratios of 20:80 to 40:60. The remaining data presented has half-life values outside of the claimed range. Applicants do not state that the claimed half-life range of from about 5 days to about 100 days is the "commercially viable" range, but this appears to be the case, since no other range is suggested to be "commercially viable". Thus, while the Declaration of Becher asserts that the use of primary amine and an auxiliary amine at varying ratios provides superior control of the release rate (paragraph 13), and that "the entire range of relative proportions of the amines in a polyamine blend yield

commercially viable pesticidal materials" (paragraph 16), it does not appear that the claimed invention provides superior control within the claimed half-life range. It is further noted that the Declaration only provides data for one principal amine (TETA) and one auxiliary amine (MXDA), while the claims recite any principal amine and any auxiliary amine, at any ratio. A single compound for each of the principal amine and auxiliary amine is insufficient for one of ordinary skill in the art to be able to determine a trend in the exemplified data which would allow the artisan to reasonably extend the probative value thereof to any principal amine and any auxiliary amine. See MPEP 716.02(d)l. Therefore, the data presented is not commensurate in scope with the claims.

The Declaration's comments regarding the graphical representations of the data of Seitz have been considered (paragraphs 3 and 4). However, the comparisons still do not appear to demonstrate superior control from the composition of the claimed invention, within the claimed half-life range of from about 5 days to about 100 days, for reasons stated above.

The Declaration's comments regarding the use of a thickener in Example 14 Seitz et al, and that one skilled in the art would not believe that the use of a thickener has a consistent or predictable effect on half life of release, have been considered (paragraphs 5-12), although it is noted that Becher does not rule out entirely the possibility of the thickener having an effect (see paragraph 18). Regardless, the original point of argument by Applicants in the Response to Final Office Action on October 26, 2009 was that the Seitz et al data show a "distinct absence of reproducibility", whereas

the pesticidal material of the claimed invention displays a "remarkably predictable change in half life with variation of the relative proportions of the amines in the polyamine blend". However, this assertion is not persuasive because Applicants are not making a direct comparison. Applicants have not reproduced their data in the same manner as Seitz, i.e., if Applicants were to repeat their data as Seitz did, with minor variations in the formulation (e.g., the use of a thickener), would they achieve the same or different results? Since no such data is presented, it cannot be conclusively determined that the data of the claimed invention is more reproducible than the data of Seitz. On the contrary, when Seitz varies the blend of isocyanates in the same manner that the claimed invention varies the blend of polyamines, the resulting trend, as graphed by Seitz, follows the same trend as that of the claimed invention (compare Figure 1 of Seitz with Figure 1A of the claimed invention).

Therefore, it is the Examiner's position that the claims are rendered obvious.

Conclusion

No claims are allowed at this time.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BARBARA FRAZIER whose telephone number is (571)270-3496. The examiner can normally be reached on Monday-Thursday 9am-4pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sharmila Landau can be reached on (571)272-0614. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

BSF

/Ashwin Mehta/
Primary Examiner, Technology Center 1600